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‘Doomsday Vault’ To Resist Global Warming Effects

By Penny MacRae
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An Arctic “doomsday vault” aimed at providing mankind with food in case of a global catastrophe will be designed to sustain the effects of climate change, the project’s builders said as they unveiled the architectural plans.

The top-security repository, carved into the permafrost of a mountain in the remote Svalbard archipelago near the North Pole, will preserve some three million batches of seeds from all known varieties of the planet’s crops.

The hope is that the vault will make it possible to re-establish crops obliterated by major disasters.

“We have taken into consideration the (outside) temperature rising and have located the facility so far inside the rock that it will be in permafrost and won’t be affected” by the outside temperature, Magnus Bredeli Tveiten, project manager at Norway’s Directorate of Public Construction and Property, told AFP.

Construction on the seed bank, also dubbed the “Noah’s Ark of food”, will begin in March.

The seed samples, such as wheat and potatoes, will be stored in two chambers located deep inside a mountain, accessed by a 120-meter (395-foot) tunnel. The tunnel and vaults will be excavated by boring and blasting techniques and the rock walls sprayed with concrete.

The seeds will be maintained at a temperature of minus 18 degrees Celsius (minus 0.4 Fahrenheit).

The vault is situated about 130 meters (426 feet) above current sea level. It would not flood if Greenland’s ice sheet melts, which some estimate would increase sea levels by seven meters (23 feet).

It is also expected to be safe if the ices of Antarctica completely melt, which experts say could increase sea levels by 61 meters (200 feet).

The entry to the vault, which will shoot out of the mountainside, will be a narrow triangular portal made of cement and steel, illuminated with artwork that changes according to the Arctic light.

In summer, “in the midnight sun, it will look like a large diamond,” said Tveiten. In winter, when the sun does not rise above the horizon, “it will glow into the darkness,” he added.

Behind the airlock door, each chamber will measure 375 square meters (4,036 square feet).

Corrugated plastic boxes the size of moving boxes will sit on rows of metal shelves.

Each box will contain about 400 samples in envelopes made of polyethelene, and each sample will contain around 500 seeds.

The samples will be stored in watertight foil packages to act as a barrier against moisture should a power failure disable refrigeration systems.

Construction on the three-million-dollar (2.3-million-euro) vault is due to finish in September. It will officially open in late winter 2008.

The design of the structure is “simple, it’s functional, it runs by itself. We can’t have a better design,” Cary Fowler, executive director of the Global Crop Diversity Trust and the brains behind the vault, told AFP.

“It makes use of the natural cold. It’s planned with the climate change factor taken into consideration and it will be frozen 200 years from now. And even in the worst case scenario, if the temperature rises it will still be safe,” he said

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